

REMARKS

Applicant, his principal attorneys in Germany, and the undersigned have carefully reviewed the first Office Action of January 14, 2008 in the subject U.S. patent application, together with the prior art cited and relied on in the rejections of the claims. In response, the Substitute Specification and claims have been amended. It is believed that the claims now pending in the subject application are patentable over the prior art cited and relied on, taken either singly or in combination. Reexamination and reconsideration of the application, and allowance of the claims is respectfully requested.

In a review of the Substitute Specification of the subject application, during the preparation of the present Amendment, several minor typographical errors were noted. These are being corrected in this Amendment. The correction of these minor errors is not a substantive change and does not raise any issues of new matter. The entry of these minor changes is respectfully requested.

The subject invention is directed to a printing unit of a rotary printing press. As is recited in currently amended claim 31, the printing unit includes a first cylinder barrel with a first cylinder barrel radius. The first cylinder cooperates with a second cylinder and defines a nip point. That second cylinder has a second cylinder radius. Bearing rings are assigned to the first cylinder and also to the second cylinder. The first bearing rings have a first radius, the second bearing rings have a second radius. The radius of the first cylinder barrel is greater than the radius of its first bearing rings. The first bearing ring radius is also greater than the second bearing ring radius.

In the subject invention, as recited in currently amended claim 1, and taken in connection with Fig. 1, for example, the first cylinder 02 is depicted as a forme cylinder and may carry a printing forme 09. As discussed in the Substitute Specification, at paragraph 017, the first cylinder 02 could also have a structure for letterpress printing, for rotogravure printing or for planographic printing. In each such configuration, the forme cylinder has an outer surface 06

which defines an effective radius r_{02} . The overall radius r_{02} of the first cylinder barrel, in each of the several possible printing configurations, is identified as the first cylinder effective radius. As may be seen in Fig. 1, that first cylinder effective radius r_{02} is greater than the radius r_{21} of the associated first bearing rings 21 that are assigned to the first cylinder. The difference between the two is depicted at u_{22} , as seen in the top left of Fig. 1.

The second cylinder can be a transfer cylinder 03, also as depicted in Fig. 1. In this configuration, the second cylinder has a second cylinder radius and is also provided with second bearing rings. As recited in currently amended claim 31, the first bearing ring radius is greater than the second bearing ring radius.

The structure recited in currently amended claim 31 is a departure from prior structure in which the combined bearing ring radiuses of two cooperating cylinders were greater than the radiuses of the two cooperating cylinders. The cylinders were brought together with a determined amount of pre-stress applied to the bearing rings. This was to insure that the two cylinders would roll true with respect to each other and that there would not be any channel drop, as could occur if the bearing rings were not in forceful engagement with each other and essentially provided the support for the two cooperating cylinders. The second cylinder in the subject invention is provided with a resilient surface when the two cylinders are in a print-on position. The effective radius of the second cylinder to r_{03} will vary whether or not the second cylinder and the first cylinder are in contact. When they are in such contact, as indicated in Fig. 1, the effective radius r_{03b1} is less than is the effective radius of r_{03u} in the unloaded condition of the second cylinder. Because the radius of the first cylinder barrel is greater than the radius of the first cylinder barrel bearing rings, and because the radiuses of the first bearing rings are greater than the radiuses of the second bearing rings, when the two cylinders are in contact with each other, at their defined nip point, the resultant surface of the second cylinder, which is typically a transfer cylinder, will be deformed, to reduce the effective radius of the second cylinder. The purpose of this is to improve print quality.

In the first Office Action of January 14, 2008, claims 31, 33, 34, 36, 41, 54-57 and 59-63 were rejected under 35 USC 102(b) as being anticipated by U.S. patent No. 6,502,508 to Schaede. Claims 32, 43, 45, 47, 49, 51-53 and 58 were rejected under 35 USC 103(a) as being unpatentable over Schaede. Claims 35, 37-40, 42, 44, 46, 48 and 50 were rejected under 35 USC 103(a) as being unpatentable over Schaede in view of U.S. patent No. 6,782,816 to Bolza-Schünemann.

In response, independent claim 31, the sole independent claim pending in the subject application, has been amended to include the language of claim 32. Such an amendment is believed to render moot the rejection of claim 31 and the various claims that depended from it as being anticipated by the Schaede reference. In addition, the printing unit as recited in currently amended claim 31 is not unpatentable over the Schaede reference, as is asserted by the Examiner, with respect to his rejection of claim 32, which has now been cancelled.

In Schaede, there is shown a cylinder drive between a first cylinder 01 and a second cylinder 02. The first cylinder 01 has a bearing ring 06, whose radius is clearly larger than that of its associated first cylinder barrel 03. The second cylinder 02 has a bearing ring 07 which is clearly of smaller radius than is its associated cylinder barrel 04. It is not possible to read the language of currently amended claim 31 onto the Schaede reference. Claim 1 requires that the first cylinder barrel radius is greater than the first cylinder bearing rings. In the Schaede reference, that would have to mean the cylinder 02 whose barrel 04 has a radius greater than its associated bearing rings.

Claim 1 also recites that the first bearing ring radius is greater than the second bearing ring radius. In Schaede, since the cylinder 02 must be the first cylinder of claim 31, its bearing rings must have a greater radius than the bearing rings of the second cylinder. It is quite clear that the reverse is true in Schaede. Thus, Schaede does not anticipate the printing unit recited in currently amended claim 32.

The rejection of claim 32 uses selective quotes of portions of sentences of the Schaede reference, in combination with assertions as to what would have been obvious to one of skill in the art, to try to assert that the direct teachings of the Schaede reference can be turned in a direction opposite of those clear teachings to somehow result in the subject invention. Such a manipulation of the reference is not appropriate or sustainable.

In the rejection of then dependent claim 32, it was first noted that Schaede teaches that "It will be apparent to one of skill in the art that a number of changes... could be made without departing from the true spirit and scope of the present invention." The portion of the sentence chosen by the Examiner to be excluded recites that these changes could be in the specific type of printing press and the nature of the web being printed. It is impossible to understand that this language could be construed as completely reversing the clear teachings of the reference.

The assertion that Schaede further teaches that compensation for effects based on other factors are desirable characteristics of a rotary printing press, provides no support for the position taken in the Office Action with respect to the rejection of claim 32. Schaede clearly shows that the cylinder with a cylinder barrel radius greater than its bearing ring radius is in cooperation engagement with a second cylinder whose second bearing ring radius is greater than the first bearing ring radius. That is directly opposite to the recitation of claim 31, as amended. No language in the Schaede reference states anything to the contrary. The clear teaching of Schaede is directly away from the structure recited in currently amended claim 31.

The Office Action further recites that it has been held that mere changes in size and/or rearrangement of parts or routine experimentation has not been sufficient to distinguish over the prior art. These general expressions are relied on to argue that it would be obvious to essentially reverse the configuration recited in claim 31 because this configuration could be easily arrived at from routine experimentation and/or simple rearrangement and re-sizing of parts. While Schaede may suggest that changes could be made to obtain compensation for the effects of temperature differences, favorable bearing ring wear and motors having power

consumptions of apparently the same magnitude as all the desirable design characteristics, those general statements cannot be used as a basis to change the basic structure of the Schaede device in a direction which is directly opposite to its clear teachings. At the risk of belaboring a point, Schaede teaches a clear relationship between first cylinder size, first bearing ring size, second cylinder size and second bearing ring size. The subject invention teaches an equally clear relationship between these same components. The two relationships are not the same. No reference can be twisted or manipulated so that it ignores its clear teachings. The Schaede reference simply does not anticipate, or render obvious the printing unit recited in currently amended claim 31.

In the Schaede reference, as discussed at Column 2 thereof, a ratio exists between the radiuses of the two sets of bearing rings. In all of those ratios, the ratio of the radius of the bearing ring 06 to the radius of the bearing ring 07 is always greater than 1. In other words, the bearing ring 06 is always bigger than the bearing ring 07. In contrast, in the subject invention, the radius of the bearing ring, which is larger than its associated cylinder, is also larger than the radius of the bearing ring of the associated cylinder. For Schaede to comply with the recitation of claim 31, as amended, the radius of the bearing ring 06 would have to be less than the radius of the first bearing ring 07. In Schaede, the opposite is true. The drawings depict it and the specification clearly states it. There is no teaching in Schaede of the positions advanced in the Office Action. There is a clear teaching away in the Schaede reference of the position set forth in the Office Action. Schaede does not describe, depict, or suggest the structure of the printing unit recited in currently amended claim 31.

All of the remaining claims pending in the subject application are dependent, either directly or indirectly from believed allowable, currently amended claim 31. They are thus also believed to be allowable. The objection to claim 54, as containing a typographical error, has been noted. That error has been corrected. Several of the dependent claims have been cancelled because their language is now included in currently amended claim 31. Several

others of the dependent claims have been amended to conform their language to that of currently amended claim 31.

The secondary reference to Bolza-Schünemann has been cited and relied on to show arrangements of cylinders, such as transfer cylinders, which are provided with bearing rings. While that is certainly correct, Bolza-Schünemann does not show the structural characteristics of the printing unit recited in claim 31. The secondary reference thus cannot controvert the clear teaching of the primary reference. Again, claim 31 and all of the claims that depend from it, are believed to be patentable over the prior art cited and relied on.

The several additional references cited in the Office Action, but not relied on in the rejections of the claims have been noted. Since they were not applied against the claims, no further discussion thereof is believed to be required.

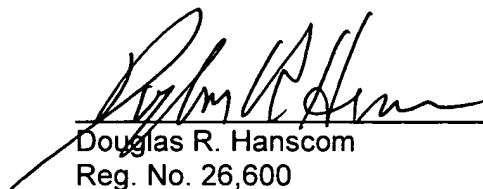
SUMMARY

Several minor typographical errors in the Substitute Specification have been corrected without the addition of any new matter. Claim 31, the sole independent claim in the application has been amended and is believed to be patentably different from the prior art cited and relied on for the reasons set forth in the Remarks. All of the rest of the claims now pending in the application depend, either directly or indirectly from believed allowable, currently amended claim 31. Allowance of the claims, and passage of the application to issue is respectfully requested.

Respectfully submitted,

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